

SOME RHOPALOCERA OF EASTERN UNITED STATES, INCLUDING THREE NEW FORMS.

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Several noteworthy forms of nearctic Rhopalocera that recently came under my observation are reported upon in the following lines. Three of these are named and described here for the first time.

Lepidopterists are often criticized for naming forms as creating too many names which, according to the critic, have little biological significance. It seems to me, however, that the whole question of the propriety of naming forms cannot be satisfactorily settled, until more is known concerning their genetical relations. It is perfectly possible that the so-called forms may be the expressions of mutation, or of the segregation of hybridized characters, representing, in both instances, genetical peculiarities of some sort. On the other hand, varieties which may appear a little more significant at first sight, like geographical races, might in reality mean no more than influences of external factors on the development of superficial characters without involving a modification of the germ plasm. There is no way in which taxonomists could tell fundamental (genetical) varieties from merely superficial ones. It would seem idle, therefore, to try to draw a line between forms that are worthy of names and those that are not. In the meantime, I feel that inasmuch as there are already many form names in Lepidoptera the uniformity of taxonomic treatment alone may justify naming new forms. Since "forms" do exist, with some peculiarities by which they may readily be known, it would seem not illogical that we should continue to list them under appropriate names, at least for the time being.

Papilionidae.

Papilio glaucus canadensis Rothschild and Jordan.

Papilio glaucus canadensis Rothsch. and Jord., Nov. Zool., vol. XIII, p. 586, 1906.

I caught at Ithaca, N. Y., this summer (July, 1925), a single specimen agreeing well with the description of *canadensis* given by Rothschild and Jordan. It was a small female with the black abdominal border of the hindwing broader than the yellow interspace between it and the cell, and the submarginal spots of the

forewing, underside, forming a continuous band, only the last two or three spots being separated.

It may be mentioned here that *Papilio glaucus* as it occurs in the vicinity of Ithaca, N. Y., while being essentially referable to the normal form of the southern race, *turnus*, nevertheless show definite tendencies toward *canadensis*. Most of the small-sized specimens show some characteristic of *canadensis*, though some of them are typical of *turnus* colorationally, with narrow abdominal border and separated submarginal spots. Very large specimens with either the broad black border or continuous submarginal spots are not rare.

Pieridae.

Pieris rapae f. *aestivus* Verity.

Pieris rapae gen. aest. *aestivus* Verity, Linn. Soc. Journ., Zool., vol. XXXII, p. 173, 1913.

Pieris rapae rapae, auct.

The name *rapae* has long been applied to the common summer form and the vernal form has been called *immaculata* Cockerell. Coolidge (this Bulletin, vol. XVIII, p. 159, 1923) called attention to the fact that the latter name is superseded by *metra* Stephens. However, according to Verity (*loc. cit.*) who examined the Linnean types of palaeartic Rhopalocera, *rapae* really refers to the spring brood. Verity writes: "The only Linnean specimen bears his label. It is a male of the first brood, with pale grey apical crescent, no discoidal spot, and underside of hind wing suffused with a thick black dusting; presumably Scandinavian. Thus we find that the Linnean nymotypical form of this species is identical with *metra* Stephens (1827) and *immaculata* Fologne (1857), and that it is the summer brood, whose characters are too well known for me to describe them here, which ought to be distinguished by a name; according to my views on the subject I propose that of *aestivus*."

It is possible that there might be a name that will take priority over Verity's *aestivus*, but this name is used here tentatively to indicate the common summer form.

Colias philodice f. *plicaduta* forma nov.

This form occurs only in females, differing from the typical form of the sex by having no yellow spots in the broad black

border of the upperside of forewing. The original spots are very faintly indicated by few yellow scales.

Holotype: ♀, Ithaca, N. Y., July 30, 1923 (W. Nakahara). Paratopotype: ♀, July 16, 1924. Paratype: ♀, Lava, Sullivan Co., N. Y., "June." Holotype has been presented to the Barnes Collection, Decatur, Ill., and paratype is in the same collection. Paratopotype is retained in the collection of the writer.

The disappearance of yellow spots from the black border of the forewing seems to be a tendency found in many species of this genus. The form here described resembles especially closely *Colias hyale polyographus* form *kutsukakensis* Yokoyama from Japan, the usual form of the Japanese butterfly simulating very nearly the normal female of *Colias philodice*.

Colias philodice ab. *inversata* aberr. nov.

Upperside: the yellow ground color is totally replaced by dark brown, except in the narrow costal area of forewing and the anal area of hindwing; veins yellow, standing out very clearly on the dark brown ground. Underside: basal two-thirds of forewing suffused with dark brown with yellow veins, as on the upperside. Otherwise same as the typical form.

Holotype: ♂, Millvale, Allegheny Co., Pa., August 20, 1893. "Presented by Mr. C. E. Brunner." Type in the Barnes Collection.

This very striking aberration may be said to be the opposite of aberr. *rothkei* Reiff., which has black veins on yellow background.

NYMPHALIDAE.

Basilarchia arthemis albofasciata (Newcomb).

Limenitis ursula var. *albofasciata* Newc., *Psyche*, vol. XIV, p. 20, pl. III, fig. 6, 1907.

Basilarchia astyanax form *albofasciata* Barnes and McDunnough, *Cont. Nat. Hist. N. Amer. Lepid.*, vol. III, p. 102, 1916.

Basilarchia arthemis albofasciata Nakahara, *Bull. Brooklyn Ent. Soc.*, vol. XIX, p. 170, 1924.

I have previously stated (*loc. cit.*) that *albofasciata* constitutes a race in the vicinity of Ithaca, N. Y., being the principal representative of the species *artemis* there. Occasional companions of the typical *albofasciata* in this locality are small specimens

agreeing with the northern race, *B. arthemis arthemis*, and a *proserpina*-like form with greatly reduced white markings. This latter might be regarded as a transition to form *atlantis* Nakahara.

Just where the boundary lines between the races *arthemis*, *albofasciata* and *astyanax* occur is an interesting problem to be worked out. I have recently examined a series of specimens from Hancock, N. Y., and these were all typical *arthemis*. Probably *albofasciata* does not occur in the Catskills.

An interesting specimen of *albofasciata* which I caught this summer at Ithaca may be mentioned here in passing. It is typical of the race, except that it has a white spot, measuring about 1 x 2 mm. in the discal cell of forewing, upperside. The position of this spot is that of a similar spot found in other species of *Basilarchia*. This form may remain unnamed for the present.

LYCAENIDAE.

Everes comyntas ab. **watermani** aberr. nov.

Very similar to the typical form on the upperside, except that the black borders of both wings are slightly broader. Underside: the postdiscal series of black spots of forewing greatly enlarged and elongated transversely, almost running into the submarginal series of spots; the two black spots near the base of hindwing much enlarged and so also are the black spots of the postdiscal series; of these latter spots the first one from the costal margin is the largest, the second spot being slightly smaller. The enlarged spots are encircled with obscure white rings; none of the spots are confluent.

Holotype: ♂, Ithaca, N. Y., July 4, 1925 (W. Nakahara). Type has been presented to the Barnes Collection.

This is the first aberration to be described under the species *comyntas*, although similar forms have been known in other species of Lycaenidae. It is named after Mr. and Mrs. George Ray Waterman in remembrance of many pleasant summers I spent as a guest at their cottage by Cayuga Lake.

In conclusion, I wish to express my thanks to Mr. Foster H. Benjamin for his kind help in the study of the new forms described in the foregoing lines.